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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/032,332	12/20/2001	Mark Moshayedi	SIMTECH.171A	4488

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MCDERMOTT WILL & EMERY LLP
18191 VON KARMAN AVE.
SUITE 500
IRVINE, CA 92612-7108

EXAMINER	
IQBAL, NADEEM	
ART UNIT	**PAPER NUMBER**
2114	

DATE MAILED: 12/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/032,332	MOSHAYEDI ET AL.	
	Examiner	Art Unit	
	Nadeem Iqbal	2114	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 October 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) *9-16* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,17-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This office action is in response to an RCE filed on Oct 6, 2005. Claims 9-16 are canceled by the Applicant, therefore would not be considered any further.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-8, 17-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al., (U.S. Patent number 6336174).

4. As per claim 1, Li et al., teaches (col. 2, lines 63-65) a memory module (HAMM) that includes a volatile memory, a nonvolatile memory coupled to the volatile memory for receiving and storing information and a controller coupled to the memories. He also teaches (col. 3, lines 5-6) that HAMM is coupled to a host. HAMM detects and responds upon detecting a power failure isolates itself from the host before copying information from volatile memory to

nonvolatile memory. He thus teaches limitations pertains to a system for flash memory systems with a host system, the flash memory system actively isolates the connection to the host system power supply and isolates the interface bus. He also teaches (col. 3, lines 15-17) that once isolated HAMM takes its power from an auxiliary power supply. He thus teaches supplemental energy store to complete write operations to flash memory. He also teaches (col. 3, lines 62-64) that the HAMM provides assurance that data will be backed-up in the event of a catastrophic failure, a file server system can complete a transaction with a client even though all or part of the data to be transferred is still in volatile memory in the file server system. He thus performs pending write operations to flash memory. He does not explicitly disclose a flash memory system. Li teaches HAMM system includes nonvolatile memory, He further teaches (col. 6, lines 45-47) that nonvolatile memory can include flash memory. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to realize that He teaches a flash memory system, since he teaches nonvolatile memory system that can include flash memory.

5. As per claim 2, Li teaches (col. 3, lines 5-6) that HAMM is coupled to a host. HAMM detects and responds upon detecting a power failure isolates itself from the host before copying information from volatile memory to nonvolatile memory. He thus teaches a detection circuit in communication with the power supply. He also teaches (col. 3, lines 15-17) that once isolated HAMM takes its power from an auxiliary power supply. He thus teaches auxiliary power source. He also teaches as stated per claim 1 above that HAMM detects and responds upon detecting a power failure isolates itself from the host before copying information from volatile memory to nonvolatile memory. He thus teaches limitations pertains controller circuitry configured to store

data in volatile memory into flash memory. He also teaches (col. 3, lines 62-64) that the HAMM provides assurance that data will be backed-up in the event of a catastrophic failure, a file server system can complete a transaction with a client even though all or part of the data to be transferred is still in volatile memory in the file server system. He thus performs pending write operations to flash memory. He does not explicitly disclose an isolation circuit isolating the auxiliary power source upon a power failure. He teaches (col. 8, lines 5-7) that if the system power fails, isolation devices will turn off and thereby electrically isolate the HAMM from the host system. It would have been obvious to a person of ordinary skill in the art to realize that Li teaches the isolation circuit isolating the auxiliary power source upon a power failure, since he teaches isolation devices that will turn off and thereby electrically isolate the HAMM from the host system.

6. As per claim 3, Li teaches as stated per claim 1 above that HAMM detects and responds upon detecting a power failure isolates itself from the host before copying information from volatile memory to nonvolatile memory. He thus would include a tri-state buffer.

7. As per claim 4, Li teaches as stated above that HAMM detects and responds upon detecting a power failure isolates itself from the host before copying information from volatile memory to nonvolatile memory. The HAMM thus would clearly include a voltage detector, since it detects a power failure.

8. As per claim 5, Li teaches (col. 9, lines 19-21) that the auxiliary power supply is a rechargeable battery. Therefore would include capacitors.

9. As per claim 6, Li teaches (col. 9, lines 19-21) that the auxiliary power supply is a rechargeable battery, and leaving the battery on during normal operation, the battery can be

recharged. He thus teaches charging an auxiliary power source. Li also teaches (col. 3, lines 5-6) that HAMM is coupled to a host. HAMM detects and responds upon detecting a power failure isolates itself from the host before copying information from volatile memory to nonvolatile memory. He thus teaches a detecting a loss of power of the supply voltage, utilizing the auxiliary power source to store data stored in volatile memory into flash memory. He does not explicitly disclose isolating the auxiliary power source. He teaches (col. 8, lines 5-7) that if the system power fails, isolation devices will turn off and thereby electrically isolate the HAMM from the host system. He also teaches (col. 3, lines 62-64) that the HAMM provides assurance that data will be backed-up in the event of a catastrophic failure, a file server system can complete a transaction with a client even though all or part of the data to be transferred is still in volatile memory in the file server system. He thus performs pending write operations to flash memory. It would have been obvious to a person of ordinary skill in the art to realize that Li teaches the isolation circuit isolating the auxiliary power source upon a power failure, since he teaches isolation devices that will turn off and thereby eclectically isolate the HAMM from the host system.

10. As per claims 7 & 8, Li teaches (col. 8, lines 5-7) that if the system power fails, isolation devices will turn off and thereby electrically isolate the HAMM from the host system. It would have been obvious to a person of ordinary skill in the art to realize that Li's isolation devices would include opening a relay interconnecting the supply voltage and auxiliary power source, since he teaches isolation devices that will turn off and thereby electrically isolate the HAMM from the host system.

11. As per claims 17 & 19, Li teaches (col. 3, lines 5-6) that HAMM is coupled to a host. HAMM detects and responds upon detecting a power failure isolates itself from the host before copying information from volatile memory to nonvolatile memory. He thus teaches a power detector, a data store storing data into non-volatile memory. Li also teaches (col. 9, lines 19-21) that the auxiliary power supply is a rechargeable battery, and leaving the battery on during normal operation, the battery can be recharged. He thus teaches charging an auxiliary power source. He does not explicitly disclose isolating the auxiliary power source. He teaches (col. 8, lines 5-7) that if the system power fails, isolation devices will turn off and thereby electrically isolate the HAMM from the host system. He also teaches (col. 3, lines 62-64) that the HAMM provides assurance that data will be backed-up in the event of a catastrophic failure, a file server system can complete a transaction with a client even though all or part of the data to be transferred is still in volatile memory in the file server system. He thus performs pending write operations to flash memory. It would have been obvious to a person of ordinary skill in the art to realize that Li teaches the isolation circuit isolating the auxiliary power source upon a power failure, since he teaches isolation devices that will turn off and thereby electrically isolate the HAMM from the host system.

12. As per claim 18, Li teaches HAMM system includes nonvolatile memory, He further teaches (col. 6, lines 45-47) that nonvolatile memory can include flash memory.

13.

14. As per claim 20, Li teaches as stated per claim 17 above that HAMM detects and responds upon detecting a power failure isolates itself from the host before copying information

from volatile memory to nonvolatile memory. HAMM includes volatile memory, there would decouple the volatile memory from external connections.

15. As per claim 21, HAMM detects and responds upon detecting a power failure isolates itself from the host before copying information from volatile memory to nonvolatile memory. He also teaches (col. 3, lines 62-64) that the HAMM provides assurance that data will be backed-up in the event of a catastrophic failure, a file server system can complete a transaction with a client even though all or part of the data to be transferred is still in volatile memory in the file server system. He thus performs pending write operations to flash memory

16. As per claim 22, Li teaches (col. 3, lines 5-6) that HAMM detects and responds upon detecting a power failure isolates itself from the host before copying information from volatile memory to nonvolatile memory. He thus teaches means for detecting loss of power detector, means for storing data in a non-volatile memory. Li also teaches (col. 9, lines 19-21) that the auxiliary power supply is a rechargeable battery. He thus teaches means for providing auxiliary power. He does not explicitly disclose means for isolating the means for preserving data upon detection of loss of power. He teaches (col. 8, lines 5-7) that if the system power fails, isolation devices will turn off and thereby electrically isolate the HAMM from the host system. He also teaches (col. 3, lines 62-64) that the HAMM provides assurance that data will be backed-up in the event of a catastrophic failure, a file server system can complete a transaction with a client even though all or part of the data to be transferred is still in volatile memory in the file server system. He thus performs pending write operations to flash memory. It would have been obvious to a person of ordinary skill in the art to realize that Li teaches means for isolating the means for

preserving data upon detection of loss of power, since he teaches isolation devices that will turn off and thereby electrically isolate the HAMM from the host system.

Response to Arguments

1. Applicant's arguments filed Sep 2, 2005 have been fully considered but they are not persuasive. As per claims 1-22, Applicants alleges that Li describe a volatile memory device which, in the absence of a trigger event, never copies digital information to non-volatile memory. Therefore Li is not understood to ever have a pending operation copying digital information to non-volatile memory prior to detecting a trigger event. Examiner contends that Li teaches (col. 7, lines 50-53) that store operations are executed by controller for at least one of the following trigger events: O/S hang-up, unexpected system reset or unexpected power failure. He further teaches (col. 8, lines 5-10) that if the system power fails, isolation devices will turn off and thereby electrically isolate the HAMM from the host system and during this time the HAMM receives its power from the auxiliary power supply, which provides safe copying of data from volatile memory to nonvolatile memory. He therefore clearly teaches trigger event includes unexpected power failure and therefore clearly includes pending operation copying digital information to non-volatile memory. He also teaches (col. 3, lines 62-64) that the HAMM provides assurance that data will be backed-up in the event of a catastrophic failure, a file server system can complete a transaction with a client even though all or part of the data to be transferred is still in volatile memory in the file server system. He thus performs pending write operations to flash memory.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nadeem Iqbal whose telephone number is (571)-272-3659. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert W Beausoliel can be reached on (571)-272-3645. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nadeem Iqbal
Primary Examiner
Art Unit 2114

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